

HP Docket No. 200208780-1

REMARKS

Applicants appreciate the Office's review of the present application. In response to the Office Action, the cited references have been reviewed, and the rejections and objections made to the claims by the Examiner have been considered. Applicants' attorney thanks the Examiner for her assistance in determining the proper manner to respond to the Notice of Non-Compliant Amendment. The claims presently on file in the present application are believed to be patentably distinguishable over the cited references, and therefore allowance of these claims is earnestly solicited.

In order to render the claims more clear and definite, and to emphasize the patentable novelty thereof, claims 19-95 have been amended, and new claims 96-103 have been added. Support for any claim amendments and new claims is found in the specification, claims, and drawings as originally filed, and no new matter has been added. Accordingly, all elected claims presently on file in the subject application are in condition for immediate allowance, and such action is respectfully requested.

Rejections**Rejection Under 35 USC §102**

Claims 22 and 28 have been rejected under 35 USC §102(b), as being anticipated by U.S. patent 6,491,377 to Cleland et al. ("Cleland"). Applicants respectfully traverse the rejection and request reconsideration based on the amendment to claim 22 and features in the claims which are neither disclosed nor suggested in the cited reference.

As to a rejection under §102, "[a]nticipation is established only when a single prior art reference discloses expressly or under the principles of inherence, each and every element of the claimed invention." *RCA Corp. v. Applied Digital Data Systems, Inc.*, (1984, CAFC) 221 U.S.P.Q. 385. The standard for lack of novelty, that is for "anticipation," is one of strict identity.

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To anticipate a claim, a patent or a single prior art reference must contain all of the essential elements of the particular claims. Schroeder v. Owens-Corning Fiberglass Corp., 514 F.2d 901, 185 U.S.P.Q. 723 (9th Cir. 1975); and Cool-Fin Elecs. Corp. v. International Elec. Research Corp., 491 F.2d 660, 180 U.S.P.Q. 481 (9th Cir. 1974). The identical invention must be shown in as complete detail as is contained in the claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

The rejection of independent claim 22, and its dependent claim 28, is respectfully traversed at least because the single cited reference does not disclose all of the essential elements of the claims arranged as required by the claims and in as complete detail as in the claims. In this regard, claim 22 recites:

"22. (Currently amended) A fluid ejection device adapted for communicative coupling to a controller configured to control ejection of fluid from the device, comprising:

a plurality of firing cells;

a fire line electrically coupled to at least some of the firing cells and adapted to receive from the controller an energy signal having energy pulses; and

an address generator in the fluid ejection device configured to provide a series of address signals adapted to enable firing cells of the plurality of firing cells in a series of address timeslots, wherein the energy signal provides at least one energy pulse during each of the address timeslots in the series of address timeslots to energize selected enabled firing cells." (emphasis added)

The Office states that the fluid ejection device comprises "an address generator 18 (figure 11A, element 18)" (Office Action, p.2). However, Applicants believe that there is no element 18; instead, this nomenclature in Fig. 11A refers to an address bus having 18 lines. The 18 lines of the address bus are also illustrated on Fig. 10, where each of the lines connects to the gate of a different heater resistor R in a primitive 1001.

Claim 22 as amended recites that the address generator is disposed in the fluid ejection device, and not in the controller. However, in the Cleland reference, the address generator is disposed in the drop firing controller 215 which is external to printheads 110,111 (i.e. fluid

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ejection devices). The Cleland reference discloses:

“Returning to FIG. 11A, it can be seen that the address bus 11107 with eighteen signal lines is electrically parallel coupled to each primitive so that each primitive is activated simultaneously with the sequenced activation signals applied to the address bus by the printer drop firing controller 215” (col. 17, lines 48-53; emphasis added).

By disposing the address generator internal to the fluid ejection device, rather than in an external controller that is communicatively coupled to the fluid ejection device, the present invention advantageously reduces the number of electrical input pads required on the fluid ejection device (see Specification, p.2, line 26 --- p.3, line 2).

The novel features of the present invention are not anticipated by the Cleland reference in that the essential element of an address generator in the fluid ejection device, arranged as required by the claim and recited in as complete detail as in the claim, is absent from the reference. Therefore, the rejection is improper at least for that reason and should be withdrawn.

Rejection Under 35USC §103

Claims 23-27 and 32 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,491,377 to Cleland et al. (“Cleland”) in view of U.S. patent 5,621,440 to Takahashi (“Takahashi”). Applicants respectfully traverse the rejection and request reconsideration.

As to a rejection under §103(a), the U.S. Patent and Trademark Office (“USPTO”) has the burden under §103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the

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references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

The rejection of dependent claims 23-27 and 32 is respectfully traversed, and reconsideration requested, at least based on the dependence of these claims on independent claim 22, whose reasons for allowability over the Cleland reference have been discussed heretofore and against which the Takahashi reference has not been cited.

It is noted further that the Takahashi reference does not teach or suggest an address generator in a fluid ejection device. Instead, as understood with reference to Figs. 5 and 7A, any address generator in the Takahashi reference is disposed in a control circuit external to the recording head (i.e. fluid ejection device):

"909 is a cable for transmission of control signals, of which one end is mounted on the carriage 901, the other end connected to the control circuit as described below, and performs transmission of image data, control signals and other signals between the control circuit and the carriage 901." (col. 6, lines 36-41).

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. The Office states that the Cleland and Takahashi references can be combined together "in order to obtain sharp and high quality images and to improve upon recording speed" (Office Action, p.5). Applicants believe that this reason is merely a conclusory statement of generalized advantages and convenient assumptions that lacks the rational underpinning required for validly

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combining the references. Consequently, this rationale impermissibly uses the Applicants' disclosure as a blueprint or in hindsight for the rejection. Because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the Cleland and Takahaski references. Therefore, the rejection is improper at least for this reason and should be withdrawn.

Claim 33 has been rejected under 35 USC §103 (a), as being unpatentable over U.S. patent 6,491,377 to Cleland et al. ("Cleland") in view of U.S. patent 5,621,440 to Takahashi ("Takahashi"), and further in view of U.S. patent 5,757,394 to Gibson et al. ("Gibson"). Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of this claim on independent claim 22, whose reasons for allowability over the Cleland reference have been discussed heretofore and against which the Takahashi and Gibson references have not been cited. In addition, the stated motivation to combine the references is improper in that it is merely a conclusory statement of generalized advantages that impermissibly uses the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

Claim 36 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,491,377 to Cleland et al. ("Cleland") in view of U.S. patent 5,621,440 to Takahashi ("Takahashi"), and further in view of U.S. patent 6,476,839 to Nakajima et. al ("Nakajima"). Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of these claims on independent claim 22, whose reasons for allowability over the Cleland reference have been discussed heretofore and against which the Takahashi and Nakajima references have not been cited.

The rejection of dependent claim 36 is also respectfully traversed for at least the following additional reasons. Claim 36 recites:

"36. (Currently amended) The fluid ejection device of claim 32, further comprising signal

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lines configured to receive a series of pulses, wherein the logic is configured to receive three pulses in the series of pulses.” (emphasis added)

The logic element recited in claim 36 is located in the address generator, as recited in its parent claim 32. However, the Nakajima reference, which is a line thermal printer unrelated to a fluid ejection device, contains no address generator (Fig. 2).

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicant’s claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. In Re Kahn, 441 F.3d, 977, 988 (CA Fed. 2006). The Office states that the Nakajima reference can be combined together with the Cleland and Takahashi references “in order to improve print quality” (Office Action, p.6). Applicant believes that this reason is too vague and not specific enough to provide the rational underpinning required for validly combining the references. The Office provides no explanation as to how the features of a line thermal printer lacking an address generator can be combined with the features of a system that includes a fluid ejection device with an on-board address generator. Consequently, this rationale impermissibly uses the Applicants’ disclosure as a blueprint or in hindsight for the rejection. Because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the references and the rejection under 103(a) at least for this reason and should be withdrawn.

Claim 39 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,491,377 to Cleland et al. (“Cleland”) in view of U.S. patent 5,621,440 to Takahashi (“Takahashi”), and further in view of U.S. patent 6,036,297 to Hayasaki (“Hayasaki”). Applicants respectfully traverse the rejection and request reconsideration at least based on the

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dependence of these claims on independent claim 22, whose reasons for allowability over the Cleland reference have been discussed heretofore and against which the Takahashi and Hayasaki references have not been cited.

The rejection of dependent claim 39 is also respectfully traversed for at least the following additional reasons. Claim 39 recites:

“39. (Currently amended) The fluid ejection device of claim 32, comprising signal lines configured to receive a series of pulses, wherein the shift register comprises shift register cells configured to receive an input signal and pulses in the series of pulses and to store the input signal in response to the received pulses.” (emphasis added)

The shift register recited in claim 39 is located in the address generator, as recited in its parent claim 32. However, in the Hayasaki reference, the shift register 304 is not part of an address generator. Rather, the shift register 304 is used for saving image data, not for generating addresses (col. 9, lines 13-37).

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. In Re Kahn, 441 F.3d, 977, 988 (CA Fed. 2006). The Office states that the Nakajima reference can be combined together with the Cleland and Takahashi references “in order to improve the quality of the printer” (Office Action, p.8). Applicant believes that this reason is too vague and not specific enough to provide the rational underpinning required for validly combining the references. There is no disclosure that either the Cleland and Takahashi references, which disclose scanning-type printers, exhibit the problems that the full-line printer disclosed by the Hayasaki reference purports to mitigate. Consequently, this rationale impermissibly uses the Applicants' disclosure as a blueprint or in hindsight for the rejection. Because the Office has not provided an articulated reason with some rational underpinning to

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combine the prior art elements in the manner claimed, it is improper to combine the references and the rejection under 103(a) at least for this reason and should be withdrawn.

Claims 42-44 have been rejected under 35 USC §103 (a), as being unpatentable over U.S. patent 6,491,377 to Cleland et al. ("Cleland") in view of U.S. patent 5,621,440 to Takahashi ("Takahashi"), further in view of U.S. patent 6,036,297 to Hayasaki ("Hayasaki"), and further in view of U.S. patent 6,270,180 to Arakawa et al. ("Arakawa"). Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of these claims on independent claim 22, whose reasons for allowability over the Cleland reference have been discussed heretofore and against which the Takahashi, Hayasaki, and Arakawa references have not been cited. In addition, the stated motivation to combine the references is improper in that it is merely a conclusory statement of generalized advantages that impermissibly uses the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

Formalities

Claim Renumbering

The Notice of Non-Compliant Amendment was issued because the listing of claims in the original response contained no claim 19. No claim 19 was ever previously presented in this case. As per the Examiner's instructions, claims 20-96 have been renumbered to claims 19-95 in an amendment made in accordance with 37 CFR 1.121. It is noted that all references to claim numbers in the Remarks section of this response refer to the amended (i.e. renumbered) claim numbers, rather than to the original claim numbers specified in the Office Action.

Amendment of the Specification

The specification has been amended to supply the missing cross-referenced co-pending

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US application serial numbers.

The specification has also been amended to correct several typographical errors discovered while reviewing the application. The amendments are formal in nature and do not alter the scope of the claims or constitute new matter.

Allowable Subject Matter

Claims 40-41 have been objected to as being dependent upon a rejected base claim and have been indicated as being allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicants appreciate the indication of allowable subject matter, and respectfully request that the rewriting of these claims in independent form be deferred until a future time.

Comments on Statement of Reasons for Allowance

Applicants agree with the Office's conclusion regarding patentability, without necessarily agreeing with or acquiescing in the reason(s) set forth in the Office Action. In particular, Applicants wish to emphasize that the patentability of claims stems from the respective combinations of elements defined by the claims, each viewed as a whole, rather than the presence of any particular element(s) in the combinations. Applicants submit that the indicated claims are allowable because the prior art fails to anticipate, teach, suggest, or render obvious the invention as claimed, independent of how the invention is paraphrased. Applicants thus rely on the claims, as drafted, rather than any characterization in the Office Action.

Conclusion

Attorney for Applicants has reviewed each one of the cited references made of record and not relied upon, and believes that the claims presently on file in the subject application patentably distinguish thereover, either taken alone or in combination with one another.

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Therefore, all claims presently on file in the subject application are in condition for immediate allowance, and such action is respectfully requested. If it is felt for any reason that direct communication with Applicant's attorney would serve to advance prosecution of this case to finality, the Examiner is invited to call the undersigned Robert C. Sismilich, Esq. at the below-listed telephone number.

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**AUTHORIZATION TO PAY AND PETITION
FOR THE ACCEPTANCE OF ANY NECESSARY FEES**

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Respectfully submitted,



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